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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,170	03/17/2002	Masakazu Sagawa	NIT-336	9702
24956	7590	03/08/2005	EXAMINER	
MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C. 1800 DIAGONAL ROAD SUITE 370 ALEXANDRIA, VA 22314			GUHARAY, KARABI	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/089,170

Applicant(s)

SAGAWA ET AL.

Examiner

Karabi Guharay

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Terminal Disclaimer

The terminal disclaimer filed on 12/09/2004 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US patent 6617774 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-9 are rejected under 35 U.S.C. 102(a) as being anticipated by Kusunoki et al. (JP 11-120898).

Regarding claims 1-4, 6, 7 & 9, Kusunoki et al. disclose an electron source comprising of a plurality of electron source elements (Fig 24 & Fig 19), each of which has a structure in which a bottom electrode (11) an insulating layer (12) and a top electrode (13) are laminated in this order (paragraph 0009-0010) and a plurality of bus electrodes (15) connected to apply a driving voltage to an electron source element, wherein the bus electrode (15) comprises a thin film electrode (15A) connected to an electrode (top electrode 13) and a thick film electrode (15B) connected to the thin film electrode (15A, see paragraph 0023), the thick film electrode having a film thickness (1micrometer, see paragraph 0028) thicker than that of a thin film electrode plating

(thickness of 15A is 20nm), where the thin film electrode (15A) comprises tungsten film (paragraph 0026).

Regarding claims 5, 8, Kusunoki discloses that the thin film electrode (15A) and thick film electrode (15B) has an open area where the insulating layer 12 is formed and open area in the thick film electrode is larger than the open area of the thin film electrode, and the top electrode 13 covers the thin film electrode that is exposed in the open area provided in the thick film electrode (see Fig 19).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-17 & 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kusunoki (JP11-120898).

Regarding claims 10-17, Kusunoki discloses the method of manufacturing a thin film type electron source comprising a step of forming a bottom electrode, a step 2 of forming the insulating layer 12, a step 3 of forming thin conductive film electrode (15A), a step 4 of forming a thick conductive film and patterning to form thick film electrode (15B) by vacuum deposition, patterning to form thin film electrode and forming a top electrode (see paragraph 0009-0023, and Fig 1-Fig 19).

The order of process 6 is different from that of process described in the prior art, however, whether to conduct the process for patterning the thin film conductor layer

before or after laminating the thick film conductor layer is a matter of choice to one skilled in the art.

Regarding claims 21-23, Kusunoki discloses the method of manufacturing thin film type electron emitter method comprising forming the bottom electrode 11, then forming the insulating layer 12, step 3 of forming a thin conductive film and selectively forming a thick film electrode on the thin film by deposition which could be plating or printing. However step 5 is different from the prior art. However, the question of whether to conduct the process for patterning the thin film conductor before or after laminating the thick film conductor is a matter of choice for a person skilled in art.

Regarding claims 18, 24, 26, 30 & 32, Kusunoki discloses a field emission cold cathode and further teaches the use of electron source in a display device (paragraph 0001-0006) comprising a first substrate 10, a plurality of electron source elements and a plurality of bus electrodes (15) that apply driving voltage to an electron source, each bus electrode comprises a thin film electrode (15A) having a thickness less than 20nm and a thick film electrode (15B) connected to the thin film electrode (15A, see paragraph 0023), the thick film electrode having a film thickness (1micrometer, see paragraph 0028) thicker than that of a thin film electrode plating (thickness of 15A is 20nm). Though Kusunoki does not explicitly disclose a frame glass a second substrate having a phosphor and frame, first substrate and second substrate forms a vacuum enclosure for the display device, these are the basic inherent structure of a cold cathode field emission display device. Further method of forming the device is not germane to the

issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

Regarding claim 19, Kusunoki discloses that the thickness of the thin film conductor (15A) is equal to 10nm (paragraph 0026).

Regarding claims 20 & 27, Kusunoki discloses that the thin film electrode should be as thin as possible and given a specific example of 10nm, however, it would have been obvious to one having ordinary skill in the art at the time the invention was made to find a suitable value in the claimed range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. ***MPEP 2144.05 II A***

Regarding claims 25 & 29, Kusunoki discloses that the thin film electrode comprises a tungsten film (see paragraph 0026).

Claims 28 & 31 recite essentially the same limitations of claim 5 or 8. Thus claim 28 is rejected as claims 5 & 8 (see rejection of claim 5 & 8).

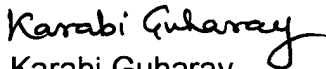
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (571) 272-2452. The examiner can normally be reached on Monday-Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is 703-872-9306.

Art Unit: 2879

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Karabi Guharay
Patent Examiner
Art Unit 2879